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10/657,707

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09/30/2005

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EXAMINER

BOSWELL, CHRISTOPHER J

ART UNIT

PAPER NUMBER

3676

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,707

Applicant(s)

ILEA ET AL.

Examiner

Christopher Boswell

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10-13 and 15-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10-13 and 15-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/29/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 37 recites the limitation "the rim on the worm gear" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

Applicant is advised that should claims 1 and 35 be found allowable, claims 24 and 36 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-8, 10-13, 15, and 20-34-40, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,698,805 to Erices et al. in view of U.S. Patent Number 4,821,521 to Shuler.

Erices et al. disclose the invention substantially as claimed. Erices et al. disclose a latch release device having a housing (1, 11, 13, and 22) having a recessed region (11) and a tubular mount (12') extending from the center of the recessed region, an electric motor (7) mounted in the housing, a worm (8) operatively coupled to the motor for driving rotation of the worm about an axis in a first rotational direction, a worm gear (gear on 12) in meshing engagement with the worm and rotatably mounted to the tubular mount (figure 1), and being mounted in the housing for rotation about an axis substantially orthogonal to the worm axis, a camshaft (the portion of 12 that drives the cam) mounted on the worm gear and having a rotation axis coincident with the gear axis, the camshaft having a distal end extending to the exterior of the housing, a cam (9) affixed at the exterior end of the camshaft, having a surface (figures 2 and 3) for engaging a latch (3 and 4) to move the latch from a closed position to a release position as the gear rotates in a first direction from a first position to a second position under control of the motor, and where the worm gear is biased against the rotation from the first position to the second position (column 3, lines 10-16; column 7, line 66-column 8, line 3), as in claims 1 and 24, wherein the tubular mount includes an open end (12') facing towards the worm gear, and the worm gear includes a shaft (the portion of 12 that the gear rotates about) extending into the open end, and an outer rim spaced from the shaft by a gear wall (figure 1), as in claim 4.

However, Erices et al. do not disclose the biasing of the worm gear is provided by a spring. Shuler teaches of biasing a gear for a latch release device being provided by a helical

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spring (8) connected between a gear (9') and a housing (6; column 2, lines 48-53), where the worm gear has a catch (8b) for retaining a first end of the spring, as in claims 21 and 43, where the catch has an overhanging portion (column 2, lines 61-63) operable to retain the spring during the assembly of the latch release device, as in claim 22, where a stop (8a) in the housing retains the second end of the spring, as in claims 23 and 44, in the same field of endeavor for the purpose of rotating the gear in a direction against which the motor rotated the gear (column 1, lines 54-column 2, line 12). It would have been obvious to one with ordinary skill in the art at the time the invention was made to use a helical spring, located between the shaft and outer most edge of the gear of Erices et al., within the housing, as taught by Shuler, where a catch would be mounted on the worm gear to retain one end of the spring, and a stop would be placed on the housing to hold the other side of the spring, to bias the gear in order to rotate the gear in a direction opposite of what the motor rotated the gear, as in claims 1, 5, 14, 21-24, 35-36, and 43-44.

Erices et al. also disclose the housing having a first stop and a second stop unitarily molded therewith, and the gear includes a first stop and a second stop (column 8, lines 30-37), wherein when the gear is in the first position, the first stops are in mutual abutment to preclude rotation in the second direction, and when the gear is in the second position, the second stops are in mutual abutment to preclude rotation in the first direction, as in claims 6, 27, and 38, further having an injection-molded closure plate (13), and the housing includes a hollow portion (14) and the housing and plate have opposing walls shaped to abut a housing of the motor when the hollow portion and the plate are secured together, and the plate further includes protrusions which extend into the housing interior to abut sides of the motor housing to preclude movement

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therepast (column 7, lines 36-41), as in claims 7, 28, and 39, wherein the hollow portion includes an upstanding peripheral ridge (figure 1) unitarily molded therewith, and shaped to abut an inner surface of the plate, and the plate of the housing includes an upstanding peripheral ridge unitarily molded therewith and shaped to abut an inner surface of the housing, to protect against the egress of water into the interior of the housing, and wherein the ridges are located to provide a water flow path around the outer periphery thereof (column 3, lines 41-52), as in claims 8 and 29.

Erices et al. further disclose the housing plate includes an aperture (figure 1) in communication with the central aperture of the gear, to permit passage of the camshaft therethrough, and wherein the distal end of the camshaft includes at least one resilient finger (end of shaft 12) received through the communicating apertures and having a surface in abutting contact with an opposing surface of the gear to preclude axial withdrawal of the camshaft from the wheel aperture (column 11, lines 30-32), as in claims 10, 31, and 40, and where the cam surface for engaging a latch is oriented to move the latch in a direction having a vectorial component (figures 2 and 3) non-parallel to the direction of rotation of the gear shaft as the gear rotates in the first direction, as in claims 11 and 32, further comprising electrically conductive contacts embedded into the housing as the housing is molded (column 7, lines 47-50), in electrical contact with the motor, and extending to the exterior of the housing for connection to an electric power supply, as in claims 12 and 33, as well as the housing and the closure plate having a plurality of holes (column 9, lines 41-43) in communication with each other and located to permit simultaneous fastening of the housing and closure plate together and fastening of the device adjacent the latch with the cam in operable proximity thereto, as in claims 13 and 34.

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Erices et al. additionally disclose the camshaft depends from a center point of the cam (figure 1) so that the cam is mounted to the worm gear; the two are coaxial (figures 1 and 2), as in claim 15, as well as a cross-section of the camshaft and the aperture are noncircular (figure 1), the cross-sections of the camshaft and the aperture orienting the cam for operation between the open and close positions, as in claim 20.

Erices et al. also disclose the worm gear having a shaft (the portion of 12 that the gear rotates about) rotatably mounted to the housing, and an outer rim (figure 1) spaced from the shaft, the rim bearing teeth in the meshing engagement with the worm, as in claim 25, where the housing having an injection-molded plastic tubular mount (12') extending into the housing interior, with the gear being rotatably mounted thereon, as in claim 26 as well as the tubular mount having an open end (12') and the gear is rotatably mounted therein by means of a shaft (the portion of 12 that the gear rotates about) extending from the gear that is received in the open end, the gear including a rim spaced from the shaft, and the spring is located between the rim and the tubular mount of the housing, as in claim 30.

Claims 16-19 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erices et al. and Shuler, as applied above to claims 1 and 24, in view of U.S. Patent Number 6,779,942 to Lipp et al.

Erices et al. and Shuler disclose the invention substantially as claimed. However, Erices et al. and Shuler do not disclose the manner to which the camshaft is attached to the worm gear. Lipp et al. teach of a control element (14) with a rectangular shaped aperture (20) and a control shaft (16) having a plurality of resilient fingers (26) including a tab (figure 6) that extends

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radially out from the axis of the control shaft, and the tab provides the surface in abutting contact with the surface of the control element that faces away from the control shaft (figure 6), as in claims 16 and 41, wherein the plurality of resilient finger includes at least two resilient fingers (figure 4) spaced apart from each other on opposing sides of the central axis of the control shaft (figure 4), as in claim 17, with the tabs having a chamfer surface (54) to facilitate entry of the resilient finger into the aperture, as in claims 18 and 42, where the tabs squeeze together when entering the aperture, and then return to their spaced position outside the aperture so that the tabs provide the surface in abutting contact with the surface of the gear that faces away from the cam (figure 6), as in claim 19 in the analogous art of torque transmission means for the purpose of providing a method of securing a control element to a control shaft which allows for reliable attachment of a control element to a control shaft irrespective of typical manufacturing variations (column 1, lines 54-60). It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate a plurality of resilient fingers on the end of the cam shaft, where the fingers will have tabs to engage an interior aperture of the cam of Erices et al. and Shuler as taught by Lipp et al. in order to provide a connection means between the worm gear to a cam shaft which allows for reliable attachment of a worm gear to the camshaft irrespective of typical manufacturing variations.

Response to Arguments

Regarding the argument that Erices et al. do not provide a spring causing the gear to reverse direction when the motor is powered down, the applicant is correct; however there is motivation within Erices et al. to bias the gear against rotation. Erices et al. discloses the

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desirability and motivation of having a gear being biased against the rotation of the motor and the gear (column 3, lines 10-16; column 7, line 66-column 8, line 3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Boswell whose telephone number is (571) 272-7054. The examiner can normally be reached on 9:00 - 4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on (571) 272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJB 
September 22, 2005


BRIAN E. GLESSNER
PRIMARY EXAMINER